



Project: I3E-Promoting Innovation in the Industrial Informatics and Embedded Systems Sectors through Networking

Workpackage 5: Networking

Activity 5.2.: I3E Workshops

Responsible partner: TUCN

Report on the 3rd I3E Workshop – Cluj-Napoca 15-Apr-2011

Cluj-Napoca, 15 April 2011

1. INTRODUCTION

The 3rd Workshop, *Current State and Trends of Embedded Systems and Industrial Informatics Fields*, of the project “I3E-Promoting Innovation in the Industrial Informatics and Embedded Systems Sectors through Networking” was organised on 15th April at the Technical University of Cluj-Napoca, Cluj-Napoca, Romania. Several, actual aspects concerning innovation were presented and analysed, a special attention being given to embedded systems and industrial informatics research fields, in accordance with the main objectives of the project.

2. DATE & PLACE

15th April 2011 at Technical University of Cluj-Napoca, Cluj-Napoca, Romania

3. PARTICIPANTS

There were 30 participants of the 3rd I3E Workshop, 21 from Romania and the rest from abroad. The workshop participants can be divided into the following main groups:

- the participants from units specialised in research and micro-production, research institutions and universities dealing with technology transfer of their research results;
- the stakeholders from different small and medium enterprises, centres of excellence, technology centres, international companies;
- the audience from the industry, government institutions, professional and business associations.

4. I3E WORKSHOP AGENDA

1. **Strategic research agenda for embedded systems and industrial informatics**, Aleksey Bratukhin, Austrian Academy of Sciences, Austria
2. **Culture and management of innovation**, Alexandru Borcea, ARIES, Bucuresti, Romania
3. **Integration of information technology in railway field:present and future**, Stefan Iovan Informatica Feroviara, Bucuresti, Romania
4. **Innovation and evolution of “operating panels” for utility vehicles (trucks). Hardware and software**, Voicu Oprean. AROBS, Cluj-Napoca, Romania
5. **The importance of industrial property protection**, Anna Maria Endes, OSIM, Bucuresti, Romania
6. **Challenges and opportunities for Romania-Western Europe ICT Companies**, Daniel Lar, Yonder, Romania-Holand
7. **EUR-ACE standard for quality of engineering education in universities**, Alexandru Borcea, ARIES, , Bucuresti,Romania
8. **Practical solutions for extending the cooperation in embedded systems and industrial informatics fields**, Tiberiu Markos, TECHNOSAM, Satu Mare, Romania
9. **Innovation requirements**, Tiberiu letia, Technical University of Cluj-Napoca, Cluj-Napoca, Romania
10. **Discussions and closing remarks**

REPORT

The aim of the Workshop **Current State and Trends of Embedded Systems and Industrial Informatics Fields** was to express authorised points of view about innovation issue and to offer a base for discussions and for exchange pertinent opinions regarding some important themes in this context, such as:

1. Potential of ICT in Romania/South-East Europe;
2. ICT market challenges and opportunities;
3. Challenges and opportunities for Romanian-Western Europe ICT companies;
4. Management of research and development in Embedded Systems and Industrial Informatics/ or ICT fields;
5. Research and development trends in ICT fields.

After a short introduction about the aim and general scope of I3E project, emphasizing the role of innovation in the actual research and economic context in general and for the two considered fields, industrial informatics and embedded systems, in particular, the first presentation referred to the strategic research agenda for embedded systems and industrial informatics. The elaboration of the strategic research agenda was presented as an important objective of the project. The main features, as well as the methodology of its development process were described in detail. The importance and advantages of its transnational character were stressed and the possible application fields were analysed in detail.

The second presentation analysed multiple aspects of the innovation process in a complex context. In the first part, the most important aspects connected to the necessity of continuous innovation, different types of innovative processes, international and European challenges, were enumerated.

A special place occupied the presentation of the priorities of European economy on medium term, such as: an intelligent increase based on the development implying knowledge and innovation, competitiveness, the using of ecological resources, territorial and social cohesion.

More nuanced aspects follow. The emphasis was given to the prosperity and to the values types which play an important role in the coordination of prosperity. Requirements and premises of governmental policies in the field are presented together with some consequences of these policies.

Some key factors such as investments and infrastructure were particularised, receiving a national dimension. Some examples are the strategies for the encouragement of small and medium companies, business regulation special structure for the collaboration among the innovations authors. The importance of the financial support was taken into account. Others pointed key factors were the educational process and the partnerships among industry, research and universities.

The most important aspects and characteristics related to the research field dedicated to railway traffic in Romania were emphasized in the third presentation. The strong correlation between the activity (software producer, SI integrator and consultant – counsel for organizations in Railways sector) of the main specialised research centre of the field (Informatica Feroviara București) and the multiple rehabilitation necessities of this sector was highlighted. A special attention was given to the connection between the objectives of the

accomplished research projects and the Romanian Rail Rehabilitation Project. The presentation was focused on the ultimate goals of the research activity of the company:

- To build a strong IT infrastructure to support the exchange of information with other similar systems across Europe;
- To implement a range of applications to better support the management of the fleet and infrastructure by enabling detailed cost tracking and improved expenditure performance;
- To support the transition towards a market and customer oriented approach of the rail companies through a series of application modules specially designed for the commercial and operational activities of the rail operators.

The presentation stressed that the research company Informatica Feroviara București, as an active part in the specific innovation and development areas, follows the present and future orientations and solutions adopted for European Railway Traffic Management Systems and European Train Control Systems.

The success development of a series of software solutions in the automotive and embedded application fields (GPS Navigation Solutions, GPS Tracking and Fleet Management, Operator Panels for Utility Vehicles and Infoentertainments Systems for Cars) was presented by the general manager of AROBS Transilvania Software Company. It constituted a successful example of good practice. The AROBS Company has experience in the development of electronic devices and software embedded products. The presented innovative system brought a considerable contribution to the improvement of the activity of companies that have a fleet of vehicles and for which delivery of products and services to the clients is of maximum importance: transport and distribution, retail, taxi and limousine companies, rent-a-car, public administration, car dealers, telecommunication.

The fifth exposure referred to the necessity and possibilities to protect the intellectual property at international and national levels. The existing legal tools and the specialised public organism which was invested to protect the intellectual creation in Romania (The State Office for Inventions and Marks) were presented. Many details about the conditions in which the originality of creation has to be defended and recognised, aspects connected with rights and costs were also given.

The next presentation emphasizes the place and importance of innovative culture in the solving process of the main problems encountered by Romanian-Western European ICT companies. In the context of business and geopolitical trends such as rising costs, increased competition, IT as commodity and taking into account trends of the technology such as: companies want direct link between IT costs and business benefits, automation will eliminate 25% of labor hours by 2015, IT matures to a more structured / industrialized model, were presented not only the challenges and risks that are facing companies in eastern Europe, but also viable solutions comprising investments in advance and in processes that make results predictable, high value services and tools and innovative culture. The advantages, disadvantages and opportunities for ICT companies in this part of Europe, were analyzed from a point of view influenced by the experience of the ICT Company in Roumania. The presentation insisted on the role of innovation (it supports the clients in defining processes and has the capacity to measure process performance) of moving from services to own products and solutions on the ISV market (application transformation) and of technical excellence (framework development) in the context.

The new paradigm of education and the EUR-ACE standard constituted the subject of the 7th exposure. First, the main European targets, in the social, educational and energetic sectors were presented. The existing, actual differences among some European economic sectors and the same sectors of others economies were highlighted. The necessity to improve the educational process was stressed, together with that of the development based on knowledge and innovation. Some of the realistic European targets for 2020 were enumerated. The necessity to accompany the educational and training process by long life learning was also presented. A solution can be offered by the digital society which must be developed, process which must be doubled by the creation of new job places, by an efficient investment in the educational systems and the creation of new work places in accordance with the candidates' skills. The European decisions must be accompanied by initiatives at national level. In parallel, the practical skills have to be developed at a superior level during the educational process. In this context, the principles and requirements of the EUR-ACE standard were presented together with the corresponding implementation principles.

An argued point of view regarding the possibilities to promote innovation activities in small companies was presented by the general manager of Technosam. Suggestions for practical solutions in order to extend the cooperation between small enterprises, research centers and universities were given taking into account the proposed mission of the company, its activity profile, its partners and customers. It was pointed that in the case of a multitude of small companies there are common problems that have to be solved such as: limited financial capacity, the lack of a coherent strategy on medium and long term, the limited expertise of the technical staff and the reduced capacity for innovation.

Many more general and important aspects regarding the innovation process, a broad and open point of view about this issue, possible ways to be followed, not only at national but also at international level, and some conclusions constituted only some points of the presentation "Innovation Requirements" done by Professor Tiberiu Letia from the Technical University of Cluj-Napoca during the last intervention.

5. RELATED DOCUMENTATION